

FEB 04 2008

ENDO, et al., 10/771,743
04 February 2008 Amendment
Responsive to 04 October 2007 Office Action

566.43491X00 / XN 187501US1
Page 2

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Currently Amended) A route search method for a navigation device, wherein

the navigation device includes a storage device which stores map data including link data of respective links constituting roads on a map, and statistical data including travel time or moving speeds of the respective links determined by statistical values of traffic information collected in the past, said statistical data being classified according to differing predetermined environmental conditions existing during collection every condition of collection of the traffic information, and the route search method comprises:

setting step which sets a departure position, a destination, and environmental conditions for searching; and conditions of collection; and

recommended route searching step which searches a recommended route from the departure position to the destination, by using the map data stored in the storage device and statistical data corresponding to the environmental conditions conditions of collection set in the setting step out of the statistical data stored in the storage device.

ENDO, et al., 10/771,743
04 February 2008 Amendment
Responsive to 04 October 2007 Office Action

566.43491X00 / XN 187501US1
Page 3

2. (Original) The route search method according to claim 1, wherein
the statistical data includes travel time or moving speeds of the respective
links every time zone, and

the recommended route searching step searches the recommended route by
using, as travel time of respective first candidate links constituting the recommended
route, travel time corresponding to a time zone including a departure point of time at
the departure position included or travel time obtained from moving speeds
corresponding to the time zone concerning and, as travel time of respective (n)th
($n \geq 2$) candidate links constituting the recommended route, travel time corresponding
to a time zone including an expected arrival point of time at the termination node of a
(n-1)th candidate link contiguous to the (n)th candidate link or travel time obtained
from moving speeds corresponding to the time zone concerned.

3. (Original) The route search method according to claim 1, further
comprising:

travel time calculating step which calculates travel time or an expected arrival
point of time for the recommended route by using travel time of respective links
constituting the recommended route used in searching the recommended route in
the recommended route searching step, and

travel time displaying step which displays travel time or an expected arrival
point of time for the recommended route which is calculated in the travel time
calculating step.

ENDO, et al., 10/771,743
04 February 2008 Amendment
Responsive to 04 October 2007 Office Action

566.43491X00 / XN 187501US1
Page 4

4. (Original) The route search method according to claim 3, wherein
the statistical data includes a degree of dispersion in traffic information being
a source of travel time or moving speeds of the respective links,
the travel time calculating step calculates an error in travel time for the
recommended route by using degree of dispersion in traffic information being a
source of travel time or moving speeds of respective links constituting the
recommended route, said travel time or moving speeds being used in searching the
recommended route in the recommended route searching step, and
the travel time displaying step displays travel time or an expected arrival point
of time for the recommended route which is calculated in the travel time calculating
step, and an error thereof.

5. (Original) The route search method according to claim 3, wherein
the statistical data includes a degree of jam every time zone of the respective
links,
the travel time calculating step determines a degree of jam in respective
sections which are obtained by dividing the recommended route into a plurality of the
sections, by using a degree of jam in a time zone corresponding to travel time or
moving speeds of respective links constituting the recommended route, said travel
time or moving speeds being used in searching the recommended route in the
recommended route searching step, and

the travel time displaying step displays travel time for the recommended route
which is calculated in the travel time calculating step, and a degree of jam in the
respective sections of the recommended route.

ENDO, et al., 10/771,743
04 February 2008 Amendment
Responsive to 04 October 2007 Office Action

566.43491X00 / XN 187501US1
Page 5

6. (Original) The route search method according to claim 2, wherein
the navigation device has a current position calculating function, and further
comprising:

route guidance step which performs route guidance to the destination by
using the recommended route searched in the recommended route searching step
and the current position calculated by the current position calculating function, and
expected arrival point of time correcting step which corrects an expected
arrival point of time at the destination by calculating travel time for a section between
the destination and the current position which disposed on the recommended route
and is calculated by the current position calculating function, wherein
the expected arrival point of time correcting step calculates travel time for the
section, by using, as travel time for a first link constituting the section, travel time
corresponding to a time zone including current time, or travel time obtained from
moving speeds corresponding to the time zone concerned, and as travel time for
respective (m)th ($m \geq 2$) links constituting the section, travel time corresponding to a
time zone including a point of time obtained by adding to current time total travel
time between the first link and a (m-1)th link, or travel time obtained from moving
speeds corresponding to the time zone concerned, and adds to current time the
travel time for the section to obtain an expected arrival point of time at the
destination.

ENDO, et al., 10/771,743
04 February 2008 Amendment
Responsive to 04 October 2007 Office Action

566.43491X00 / XN 187501US1
Page 6

7. (Original) The route search method according to claim 2, wherein the navigation device has a current position calculating function, and further comprising:

route guidance step which performs route guidance to a destination by using a recommended route searched in the recommended route searching step and a current position calculated by the current position calculating function, and

re-search judgment step which compares actual travel time for a section on the recommended route from the departure position to the current position, with travel time for the section concerned on the recommended route which is obtained from travel time for respective links constituting the recommended route and used in searching the recommended route in the recommended route searching step, and judges the necessity of searching a recommended route again according to the result of the comparison, and wherein

the route searching step searches a recommended route to the destination set in the setting step again with the current position calculated by the current position calculating function as a departure position and current time as a departure point of time in the case where it is judged in the re-search judgment step that it is necessary to search a recommended route again.

8. (Currently Amended) A route search method for a navigation device which has a current position detecting function, wherein

the navigation device includes a storage device which stores map data including link data of respective links, and statistical data including travel time or moving speeds of the respective links constituting roads on the map, said travel time

ENDO, et al., 10/771,743
04 February 2008 Amendment
Responsive to 04 October 2007 Office Action

566.43491X00 / XN 187501US1
Page 7

or moving speeds being determined by traffic information statistical values collected in the past, and the route search method comprising:

setting step which sets a departuredestination position,
present status data obtaining step which obtains present status data including travel time or moving speeds determined by present traffic information of respective links located in a peripheral region of the current position detected by the current position detecting function, from outside, and

route searching step which searches a recommended route from the current position to the destination by using the map data and the statistical data stored in the storage device and the present status data obtained in the present status data obtaining step.

9. (Previously Presented) The route search method according to claim 8, further comprising

general present status data obtaining step which obtains general present status data including a degree of jam in respective links located in the peripheral region of the current position, from outside, and wherein

the statistical data includes a degree of jam in travel every link, and in the case where a degree of jam in respective links located in the peripheral region of the current position, which is indicated by the general present status data, and a degree of jam in respective links located in the peripheral region of the current position, which is included in the statistical data, are different from each other, the present status data obtaining step obtains present status data of respective links located in the peripheral region of the current position, from outside.

ENDO, et al., 10/771,743
04 February 2008 Amendment
Responsive to 04 October 2007 Office Action

566.43491X00 / XN 187501US1
Page 8

10. (Original) The route search method according to claim 8, further comprising

general present status data obtaining step which obtains general present status data including a degree of jam in respective links located in the peripheral region of the current position, from outside, and wherein

the present status data includes a degree of jam in travel every link, and in the case where the general present status data of respective links located in the peripheral region of the current position has been obtained, and a degree of jam in respective links located in the peripheral region of the current position, which is indicated by the general present status data concerned, and a degree of jam in respective links located in the peripheral region of the current position, which is indicated by the already obtained general present status data, are different from each other,

the present status data obtaining step obtains again, from outside, present status data of respective links located in the peripheral region of the current position.

11. (Currently Amended) The route search method according to claim 8, wherein

the present status data obtaining step does not newly obtain present status data of respective links located in the current position, from outside, until a predetermined period of time has elapsed since the present status data is obtained.

ENDO, et al., 10/771,743
04 February 2008 Amendment
Responsive to 04 October 2007 Office Action

566.43491X00 / XN 187501US1
Page 9

12. (Original) The route search method according to claim 8, wherein
the present status data obtaining step newly obtains present status data of
respective links located in the peripheral region of the current position, from outside,
in the case where a predetermined period of time has elapsed since the present
status data is obtained.

13. (Original) The route search method according to claim 8, further
comprising

traffic restriction information obtaining step which obtains traffic restriction
information for roads from outside, and wherein

the present status data obtaining step obtains present status data of
respective links located in the peripheral region of the current position, from outside,
in the case where traffic restriction information for the peripheral region of the
current position is obtained.

14. (Original) The route search method according to claim 8, wherein
the route searching step searches the recommended route by using, as travel
time for respective first candidate links constituting the recommended route, travel
time in the present status data or travel time obtained from moving speeds in the
present status data, and as travel time for respective (n)th ($n \geq 2$) candidate links
constituting the recommended route, travel time in the present status data or travel
time obtained from moving speeds in the present status data, which is provided in
the case that a time difference between an expected arrival point of time at the
termination node of a (n-1)th link contiguous to the (n)th link and a departure point of

ENDO, et al., 10/771,743
04 February 2008 Amendment
Responsive to 04 October 2007 Office Action

566.43491X00 / XN 187501US1
Page 10

time at the departure position is below a predetermined value, and travel time in the statistical data or travel time obtained from moving speeds in the statistical data, which is provided in the case that the time difference is not less than the predetermined value.

15. (Original) The route search method according to claim 8, wherein the route searching step searches the recommended route by using, as travel time for candidate links of respective links constituting the recommended route, travel time in the present status data or travel time obtained from moving speeds in the present status data for candidate links located in the peripheral region of the current position, and travel time in the statistical data or travel time obtained from moving speeds for candidate links located outside the peripheral region of the current position.

16. (Original) The route search method according to claim 8, further comprising:

travel time calculating step which calculates travel time for the recommended route or an expected arrival point of time by using travel time of respective links constituting the recommended route used in searching the recommended route in the route searching step, and

travel time displaying step which displays travel time for the recommended route or an expected arrival point of time calculated in the travel time calculating step, and wherein

ENDO, et al., 10/771,743
04 February 2008 Amendment
Responsive to 04 October 2007 Office Action

566.43491X00 / XN 187501US1
Page 11

the statistical data and the present status data include a degree of jam in every link,

the travel time calculating step determines a degree of jam in respective sections which are obtained by dividing the recommended route into a plurality of the sections, by using a degree of jam in the present status data for the link for which the present status data are used in the route searching step, and a degree of jam in the present status data for the link for which the statistical data are used in the route searching step, among links constituting the recommended route, and

the travel time displaying step displays travel time for the recommended route calculated in the travel time calculating step, and a degree of jam in respective sections of the recommended route.

17. (Original) The route search method according to claim 8, further comprising:

travel time calculating step which calculates travel time or an expected arrival point of time for the recommended route searched in the route searching step by using the statistical data stored in the storage device and the present status data obtained in the present status data obtaining step, and

travel time displaying step which displays travel time for the recommended route or an expected arrival point of time calculated in the travel time calculating step.

ENDO, et al., 10/771,743
04 February 2008 Amendment
Responsive to 04 October 2007 Office Action

566.43491X00 / XN 187501US1
Page 12

18. (Original) The route search method according to claim 8; further comprising:

route guidance step which performs route guidance to the destination by using the recommended route searched in the recommended route searching step and the current position calculated by the current position calculating function, and expected arrival point of time correcting step which corrects an expected arrival point of time at the destination by calculating travel time for a section between the destination and the current position which is disposed on the recommended route, and wherein

the expected arrival point of time correcting step calculates travel time for the section, by using, as travel time for a first link constituting the section, travel time for the link determined from the present status data or travel time obtained from moving speeds for the link determined from the present status data, and as travel time for respective (m)th ($m \geq 2$) links constituting the section, travel time for the links determined from the present status data or travel time obtained from moving speeds for the links determined from the present status data, which is provided in the case that total travel time from the first link to a (m-1)th link is below a predetermined value, and travel time for the link in the statistical data or travel time obtained from moving speeds for the link in the statistical data, which is provided in the case that the total travel time is not less than the predetermined value, and adds travel time for the section to current time to obtain an expected arrival point of time at the destination.

ENDO, et al., 10/771,743
04 February 2008 Amendment
Responsive to 04 October 2007 Office Action

566.43491X00 / XN 187501US1
Page 13

19. (Original) The route search method according to claim 8, further comprising:

route guidance step which performs route guidance to the destination by using the recommended route searched in the recommended route searching step and the current position, and

expected arrival point of time correcting step which corrects an expected arrival point of time at the destination by calculating travel time for a section between the destination and the current position disposed on the recommended route, and wherein

the expected arrival point of time correcting step calculates travel time for the section, by using, as travel time for respective links constituting the section, travel time for links located in the peripheral region of the current position in the present status data or travel time obtained from moving speeds for the links concerned in the present status data, and travel time for links located outside the peripheral region of the current position in the statistical data or travel time obtained from moving speeds for the links concerned in the statistical data, and adds to current time the travel time for the section to obtain an expected arrival point of time at the destination.

20. (Cancelled)